

REMARKS

Summary of the Office Action

Claims 1, 4, 5, 7 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,873,196 to Hoffmann et al. (“Hoffmann”) in view of U.S. Patent No. 3,676,102 to Clark et al. (“Clark”) and Biology of Plants by Raven et al. (“Raven”).

Response to the Office Action

Claims 1, 4, 5, 7 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoffmann in view of Clark and Raven. Applicants respectfully traverse the rejection under 35 U.S.C. § 103(a).

The Office Action acknowledges that Hoffman fails to teach increasing an amount of the substance that is absorbed through the conductive tissue of the branch by inhibiting means being carried out in order to inhibit transpiration through a leaf on the branch, such that a driving force of transpiration provides a flow of the substance into the conductive tissue, and relies on Clark and Raven to overcome the deficiencies of Hoffman.

At page 5, lines 12-18, the Office Action asserts that “[a]t the time the invention was made, one of ordinary skill in the art would have been motivated to combine the method taught by Hoffman with the method taught by Clark because Hoffman taught a device for the release of active substances into exposed conductive tissue of plants; Clark taught that use of chemical means to close stomata openings was advantageous; and, Raven taught the factors affecting plant transpiration and movement of water and solutes through conductive tissue of plants of photosynthesizing plant tissue.” The Office Action goes on to assert that at the time the

invention was made, one of ordinary skill in the art would have had a reasonable expectation of success that the combining of the method taught by Hoffman and the method taught by Clark would provide the claimed method.

In this regard, Applicants respectfully submit that there is no teaching, suggestion or motivation to combine the methods of Hoffman and Clark. Furthermore, Applicants respectfully submit that one of ordinary skill in the art would not have a reasonable expectation of success that the combining of the method taught by Hoffman and the method taught by Clark would provide the claimed method.

According to Hoffmann, to make the implantable device release the active substance efficiently, the water potential of the plant must be higher than that of the implantable device. Applicants submit that a higher water potential of the plant could be achieved by inhibiting transpiration. However, according to Clark and Raven, to stimulate the transportation of the substances in the plant, the transpiration must be stimulated in the plant. That is to say, the teachings of Clark and Raven are opposite to inhibiting transpiration. Accordingly, one of ordinary skill in the art would not have a reasonable expectation of success that the combining of the method taught by Hoffman and the method taught by Clark would provide the claimed method.

Moreover, even if Hoffman, Clark and Raven could be combined, a proposition with which Applicants disagree, the combined teachings still would not show all the claim limitations. The limitations of Claim 1 include:

- (a) removing branch tissue to expose conductive tissue of a branch;
- (b) contacting the exposed conductive tissue of the branch with the substance;

(c) increasing an amount of the substance that is absorbed through the conductive tissue of the branch; and

(d) inhibiting means being carried out in order to inhibit transpiration through a leaf on the branch such that a driving force of transpiration provides a flow of the substance into the conductive tissue.

With respect to (d), especially, the present invention makes it possible to stimulate the flow of the substance from the branch toward the shoot by inhibiting the transpiration through only the leaves of the branch which is exposed to the substance. This limitation is not disclosed by the cited references. Thus, even if the references are combined, the combined references do not teach or suggest all the claim limitations, especially the above (d).

Furthermore, the present invention is different from Hoffmann in that the substances are directly absorbed through the conductive tissue and flow with the sap in the conductive tissue in a high introduction volume (see paragraph 0030 of the present application). On the other hand, in Hoffmann, the substances are released from the implantable device in the plant. In addition, Applicants' observation of the substances suggest that the implantable device of Hoffmann would be transported in a quite small volume and very slowly (see paragraph 0046 and Fig. 13 of the present application). Applicants submit that the differences between the present invention and Hoffmann would not have been obvious to a person having ordinary skill in the art, even if Clark and Raven are combined with Hoffmann.

Accordingly, Applicants respectfully submit that the claimed invention is not prima facie obvious to one of ordinary skill in the art at the time the invention was made. It is requested that

the rejection under 35 U.S.C. § 103(a), of claims 1, 4, 5, 7 and 9 be withdrawn, and the claims allowed.

CONCLUSION

In view of the foregoing, Applicants submit that the pending claims are in condition for allowance, and respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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